T04D07 – 14.3 Resonance

Name…….

Resonance can be considered as the condition occurring when more than one valid Lewis structure can be written for a particular molecule.

Resonance structures are imaginary. They represent extremes of electron location. Resonance can be considered as a valence theory solution to a molecular orbital problem.

The actual structure of a molecule is a weighted average of all resonance contributors. The result is that the electrons are distributed over the entire molecule, and not isolated, as suggested by individual resonance structures. For the *Resonance in Motion* examples below you can think of is as if the structures were changing infinitely fast, so that electrons and charges were everywhere at once.

1. Draw **ALL** resonance structures for each of the following molecules or ions.

Carbonate ion, CO_3^{-2}

Nitrite ion, NO_2^{-1}

Nitrate ion, NO_3^{-1}

Laughing gas, N_2O